

# Hemobilia and Mirizzi Syndrome: A Rare Combination

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## CASE REPORT

A 64-year-old obese woman presented with sudden onset of abdominal pain and hematemesis. Physical exam was notable for tenderness in the right upper quadrant (RUQ) with a positive Murphy's sign. Lab results showed elevated aspartate amino-

transferase 291 U/L, alanine aminotransferase 231 U/L, and total bilirubin 2.3 mg/L. A RUQ ultrasound showed cholelithiasis. Total bilirubin increased to 4.3 mg/L in the next 24 hours. Endoscopic retrograde cholangiopancreatography (ERCP) revealed a large filling defect in the proximal common bile duct (CBD), close to the takeoff of the cystic duct and indicative of Mirizzi syndrome, and blood clots extruding through the major papilla consistent with hemobilia (Figure 1 and Figure 2). Balloon catheter removal of the stones was unsuccessful due to the largest stone appearing to be within the gallbladder fossa; a biliary stent was placed for biliary drainage. Computed tomography showed a large gallstone with



**Figure 1.** ERCP showing large filling defect in the proximal CBD, close to the takeoff of the cystic duct and indicative of Mirizzi syndrome.



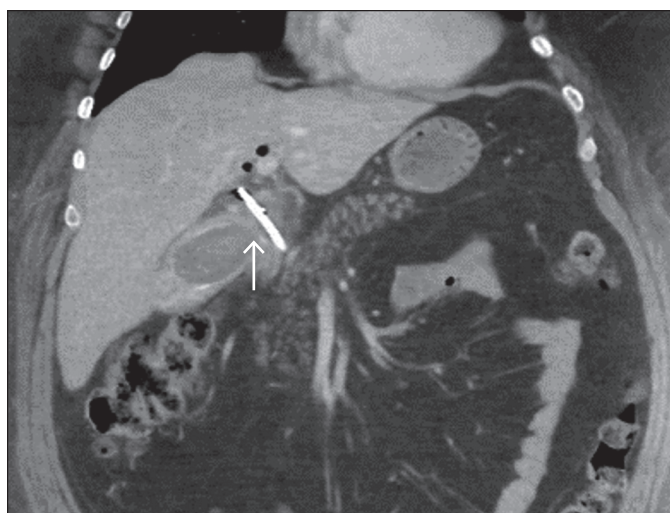
**Figure 2.** Blood clots extruding through the major papilla consistent with hemobilia.

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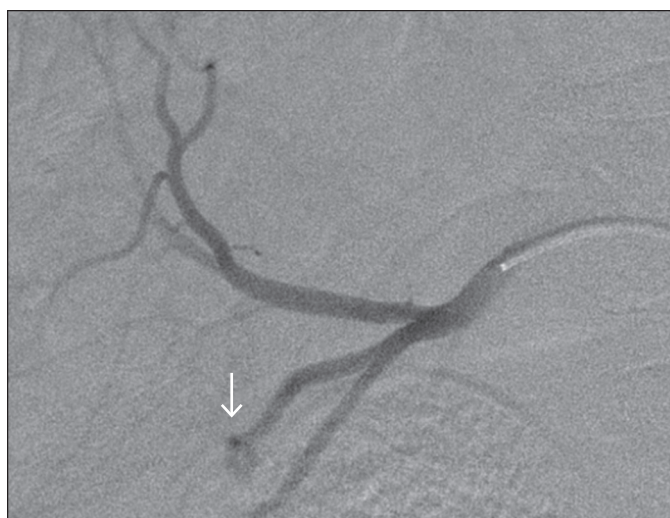


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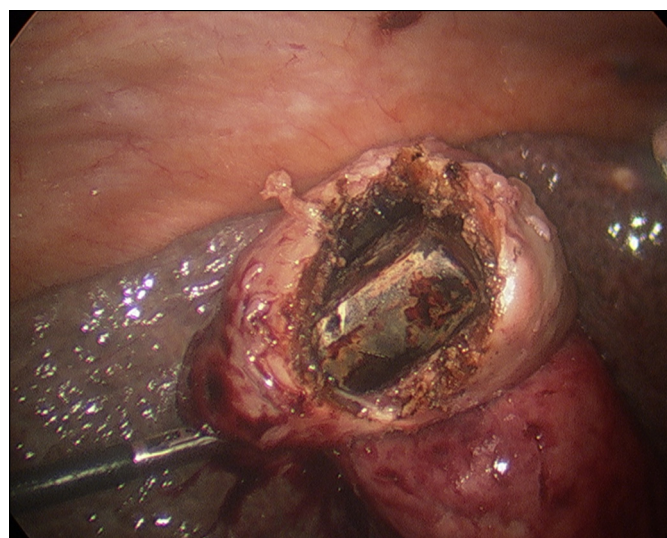


**Figure 3.** Computed tomography showing a large gallstone close to the biliary stent.

close approximation to the biliary stent (Figure 3). Hepatic artery angiography on hospital day 4 revealed active extravasation from the proximal right hepatic artery into the gallbladder, consistent with a pseudoaneurysm off the origin of the cystic artery (Figure 4). The pseudoaneurysm was successfully coiled and bleeding ceased. Due to ongoing obstruction secondary to Mirizzi syndrome, a laparoscopic cholecystectomy was performed on hospital day 7. Findings included a necrotic gallbladder with multiple gallstones impacted in the gallbladder wall, including a large stone (5 cm) in the neck of the gallbladder, which compressed the CBD without fistula formation. This confirmed type 1 Mirizzi syndrome (Figure 5). Total bilirubin trended down, and the



**Figure 4.** Hepatic artery angiography revealing an active extravasation from the proximal right hepatic artery into the gallbladder, consistent with a pseudoaneurysm off the origin of the cystic artery.



**Figure 5.** Laparoscopic cholecystectomy showing necrotic gallbladder with multiple gallstones impacted in the gallbladder wall, including a large stone (5 cm) in the neck, which compressed the CBD without fistula formation.

patient was discharged with follow up in GI and hepatobiliary surgery clinics.

Few cases of hemobilia in combination with Mirizzi syndrome have been reported. Gallstone erosion into the cystic artery leading to pseudoaneurysm is well described, as is gallstone erosion into the CBD, but rarely do both occur simultaneously. Mirizzi syndrome is the impaction of a stone in the neck of the gallbladder or cystic duct with subsequent extrinsic compression and partial obstruction of the CBD.<sup>1</sup> The classification system is based on whether fistulization has occurred between the cystic duct and the CBD.<sup>2</sup> Hemobilia describes hemorrhage into the biliary system which, in the majority of cases, is due to trauma or iatrogenic causes; however, 10% of cases of major hemobilia are the result of gallstones.<sup>3</sup> ERCP is used to confirm the diagnosis of Mirizzi syndrome as well as hemobilia. Surgery is the most common treatment for all types of Mirizzi syndrome; the type of surgery is determined by the extent of fistulization.<sup>2</sup> This case highlights the importance of early recognition of rare complications of gallstones and the importance of quick intervention with ERCP and embolization.

## DISCLOSURES

**Author contributions:** All authors contributed equally in the drafting of the manuscript. Eric M. Nelsen is the article guarantor.

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Informed consent was obtained for this case report.

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